ATTACHMENT A
FACTOR CONSIDERATION AND PENALTY CALCULATION METHODOLOGY FOR ADMINISTRATIVE CIVIL LIABILITY COMPLAINT NO. R5-2019-0505
CARLOS C. LOURENCO DAIRY
MERCED COUNTY

This document provides details to support recommendations for enforcement in response to Carlos C. Lourenco Dairy's (Discharger) discharge to waters of the state. The Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) Prosecution Team derived the proposed administrative civil liability following the State Water Resources Control Board's (State Water Board) Water Quality Enforcement Policy (Enforcement Policy) (https://www.waterboards.ca.gov/water_issues/programs/enforcement/water_quality_enforcement.shtml).

Regulatory Basis for Alleged Violation and Proposed Liability

The Discharger is required to comply with the Central Valley Water Board's *Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies, Order R5-2013-0122* (Reissued General Order) because it is a dairy that has been operating since 1 October 1995. The Discharger has been enrolled in the Reissued General Order since 29 June 2007.

Prohibition A.4. in the Reissued General Order states that "the collection, treatment, storage, discharge or disposal of wastes at an existing milk cow dairy shall not result in the creation of a condition of pollution or nuisance." California Water Code (Water Code) section 13050 subdivision (l) defines pollution as "an alteration of the quality of waters of the state to a degree which unreasonably affects … the waters for beneficial uses," including "contamination."

On 19 October 2017 the Discharger discharged 116,064 gallons of dairy lagoon wastewater blended with fresh irrigation water (dairy wastewater) to Black Rascal Creek, a water of the state. In doing so, the Prosecution Team alleges, that the Discharger violated Prohibition A.4. of the Reissued General Order.

The Prosecution Team calculated the gallons of dairy wastewater discharged by using the known duration of the discharge and the average flow rate as estimated by Merced Irrigation District and California Department of Fish and Wildlife (Fish and Wildlife) during the 19 October 2017 inspection. The discharge was initially observed by Merced Irrigation District staff at approximately 10:40 a.m. on 19 October 2017. Central Valley Water Board staff and Fish and Wildlife wardens observed the discharge stopping at approximately 15:50 on 19 October 2017. In total, the discharge event lasted for approximately five hours and ten minutes.

Fish and Wildlife Warden Nelson estimated the flow rate of the discharge using a 10-gallon container. The flow of water from the discharge filled the 10-gallon container in approximately 2 seconds, or 300 gallons per minute, or 18,000 gallons per hour.

Additionally, in the Hazardous Materials Spill Report from the California Emergency Management Agency Merced Irrigation District estimated the flow rate of the discharge to be approximately one cubic foot per second, equivalent to approximately 7.5 gallons per second, or 448.8 gallons per minute, or 27,000 gallons per hour.

The Prosecution Team elected to use an average of both flow rates for an estimated flow rate of 374.4 gallons per minute or 22,464 gallons per hour. Using both the estimated flow rate of 374.4 gallons per minute and the observed duration of the discharge event, the Prosecution Team alleges there were 116,064 gallons of dairy wastewater discharged to Black Rascal Creek from Discharger's dairy on 19 October 2017.

The Discharger's Priority Report of Significant Event noted that there were 93,000 gallons of dairy wastewater discharged from its dairy on 19 October 2017.

Estimated Flow Rate x Observed Duration of Discharge

374.4 gallons per minute x 310 minutes = 116,064 gallons

Pursuant to Water Code section 13350, subdivision (a)(2) "a person who in violation of a waste discharge requirement, waiver condition, certification, or other order or prohibition issued, reissued, or amended by a regional board or the state board, discharges waste, or causes or permits waste to be deposited where it is discharged, into waters of the state … shall be liable civilly." Water Code section 13350 subdivision (e) allows the regional board to impose civil liability on either a per day or per gallon basis of $5,000 per day of violation or $10 per gallon of waste discharged.

Pursuant to the Enforcement Policy for discharges of between 100,000 gallons and 2,000,000 gallons, the Water Boards may elect to use a value between $2.00 and $10.00 per gallon. This Complaint uses a value of $2.00 per gallon.

Step 1: Actual or Potential for Harm for Discharge Violations

The initial step in determining liability for a discharge violation is to determine the actual harm or potential harm to the water body's beneficial uses caused by the violation using a three-factor scoring system to quantify: (1) the degree of toxicity of the discharge; (2) the actual harm or potential harm to beneficial uses; and (3) the discharge's susceptibility to cleanup or abatement for each violation or group of violations.

Factor 1: The Degree of Toxicity of the Discharge

The evaluation of the degree of toxicity considers the physical, chemical, biological, and/or thermal characteristics (i.e., the degree of toxicity) of the discharge, waste, fill, or material involved in the violation, and the risk of damage the discharge could cause to

the receptors or beneficial uses. Evaluation of the discharged material's toxicity should account for all the characteristics of the material *prior to discharge*, including, but not limited to, whether it is partially treated, diluted, concentrated, and/or a mixture of different constituents. Toxicity analysis should include assessment of both lethal and sublethal effects such as effects on growth and reproduction.

Based on the physical, chemical, biological or thermal characteristics of dairy wastewater the degree of toxicity is above-moderate (3). A score of "above-moderate" is assigned when the discharged material poses an above-moderate risk or threat to potential receptors (i.e., the chemical and/or physical characteristics of the discharged material exceed known risk factors or there is substantial threat to potential receptors).

Dairy wastewater contains high levels of total suspended solids, pathogenic organisms, nutrients, including ammonia, oxygen-demanding organic compounds, and other pollutants. Untreated dairy wastewater poses a direct threat to human and ecological receptors. Central Valley Water Board staff took samples and performed analysis of the discharge at Discharger's dairy on 19 October 2017. A field test for Total Ammonia was taken and Central Valley Water Board staff observed that it exceeded 6 parts per million (ppm). A full analysis was not performed on the samples so certain data, such as the content of the samples with regards to pathogenic organisms and oxygen-demanding compounds, is not specifically known. However, dairy wastewater is known to contain high levels of total suspended solids, pathogenic organisms, oxygen-demanding organic compounds, and other pollutants because of the nature of the waste contained in dairy wastewater which includes cow manure.

The results of the Central Valley Water Board's field tests are summarized in Table 1:

Table 1. This table includes EC, Temp and pH for the four samples collected by Regional Board staff.

Sample # (Time)	EC (µS)	Temp. (°C)	pH	Location
#1 (15:20)	888	23.2	8.43	Discharge Pipe into Black Rascal Creek
#2 (15:31)	883	22.7	7.85	Discharge Pipe into Black Rascal Creek
#3 (15:36)	27.03	21.6	8.63	20-feet up gradient of Discharge on Black Rascal Creek
#4 (15:42)	930	22.8	7.72	Wastewater On-Property before valve/Discharge

The dairy wastewater that reached Black Rascal Creek had been blended with freshwater. The blending occurred as part of the process that the Discharger uses to irrigate its fields as described by Mr. Jose Mora, herdsmen at Discharger's dairy. According to Mr. Mora, freshwater from the Merced Irrigation District is blended with dairy wastewater on the Discharger's property before the blended freshwater and dairy wastewater is applied to the Discharger's agricultural fields.

However, the addition of freshwater to the dairy wastewater does not mitigate against the threats posed to beneficial uses by the discharge of dairy wastewater. For example, pathogenic organisms pose a significant risk to the potential receptors in any concentration.

Therefore, a score of above-moderate (3) is assigned.

Factor 2: Actual Harm or Potential Harm to Beneficial Uses

Because actual harm is not always quantifiable due to untimely reporting, inadequate monitoring, and/or other practical limitations, potential harm can be used under this factor "Below moderate" is assigned when there are observed or reasonably expected potential impacts, but based on the characteristics of the discharge and applicable beneficial uses, harm or potential harm to beneficial uses is measurable in the short term, but not appreciable in the long term. The actual or potential for harm to beneficial uses from the discharge is below moderate (2).

The Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region (Basin Plan) identifies the beneficial uses of Black Rascal Creek. Black Rascal Creek south of Oak Avenue in Merced flows southwest before turning west and combining with Bear Creek, ultimately discharging to the San Joaquin River near Bear Creek Road. The potential (P) and existing (E) beneficial uses for this section of the San Joaquin River are as follows**:** (P) MUN Municipal and Domestic Supply, (E) AGR Irrigation, (E) AGR Stock Watering, (E) PROC Process, (E) REC-1 Contact, (E) REC-1 Canoeing and rafting, (E) REC-2 Other non-contact, (E) HABITAT Warm, (E) MIGR Warm, (E) MIGR Cold, (E) SPWN Warm, (P) SPWN Cold, (E) WILD Wildlife Habitat.

Black Rascal Creek is a seasonal creek and is not considered by California Department of Fish and Wildlife to be a major waterway, however, it is a water of the state. It typically has a low flow and receives irrigation runoff from many different sources.

Dairy wastewater contains high levels of suspended solids, pathogenic organisms, ammonia, nutrients, oxygen-demanding organic compounds, and other pollutants. Runoff from animal confinement facilities, like dairies, can impair both surface and ground water beneficial uses. The greatest potential for water quality problems has historically stemmed from the overloading of the facilities' waste containment and treatment ponds during the rainy season and inappropriate application of wastewater

and manure.[1] In this instance, the potential harm to beneficial uses and water quality resulted from a direct discharge of dairy wastewater/tailwater from the dairy's cropland to Black Rascal Creek.

Therefore, a score of below moderate (2) is appropriate.

Factor 3: Susceptibility to Cleanup or Abatement

A score of 1 is assigned for this factor if less than 50 percent of the discharge is susceptible to cleanup or abatement, or if 50 percent or more of the discharge is susceptible to cleanup or abatement, but the discharger failed to clean up 50 percent or more of the discharge within a reasonable time. Natural attenuation of discharged pollutants in the environment is not considered cleanup or abatement for purposes of evaluating this factor.

A score of 1 is appropriate because the Discharger did not clean up 50 percent or more of the discharge within a reasonable amount of time.

Step 1 Final Score:

The sum of the above scores is 6. This value is used in Step 2 as the "Potential for Harm" score.

Step 2: Assessments for Discharge Violations

Per Gallon Assessments for Discharge Violations

As determined in Step 1, the Potential for Harm factor for the violation is 6.

The Prosecution team determined that the Deviation from Requirement is major. "Major" is assigned when the requirement has been rendered ineffective (e.g., discharger disregards the requirement and/or the requirement is rendered ineffective in its essential functions).

Prohibition A.4 states that "the collection, treatment, storage, discharge or disposal of wastes at an existing milk cow dairy shall not result in the creation of a condition of pollution or nuisance." The unpermitted discharge of dairy wastewater renders this requirement ineffective in its essential function and thus represents a major deviation.

Using Table 1 from the Enforcement Policy, the Per Gallon Factor is .28.

Water Code section 13350 subdivision (e) provides that liability up to $10 per gallon. During the 19 October 2017 discharge an estimated 116,064 gallons of dairy wastewater was released to Black Rascal Creek. As explained in more detail above, the total volume used for calculating the per gallon penalty is 116,064 gallons.

[1] Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley Region, 5th Edition Revised May 2018 (with Approved Amendments), the Sacramento River Basin and the San Joaquin River Basin, Section 4.1.1.3 Animal Confinement Operations, p. 4-4.

Water Code section 13350 subdivision (e) allows the Prosecution Team to pursue either per day or per gallon penalties, but not both. The Prosecution Team has decided that per gallon penalties are appropriate in this matter and therefore, there is no per day assessment for the violation. In addition, the Prosecution Team has elected to utilize the high volume discount and apply per gallon rate of $2 per gallon.

The initial liability amount for violation is calculated by multiplying the gallons discharged by $2 per gallon by the per gallon factor:

(Per Gallon Penalty x Gallons Discharge) x Per Gallon Factor

($2 x 116,064 gallons) x .28 = $64,996

Step 3: Per Day Assessments for Non-Discharge Violations

This step does not apply because the violation is a discharge violation.

Step 4: Adjustment Factors

The Enforcement Policy specifies the consideration of a discharger's conduct using three additional factors for modification of the amount of the initial liability determined from Steps 1 through 3.

Degree of Culpability

In order to determine a dischargers degree of culpability it is necessary to identify any performance standards (or, in their absence, prevailing industry practices) in the context of the violation. The test for whether a discharger is negligent is what a reasonable and prudent person would have done or not done under similar circumstances.

Mr. Mora, herdsmen at the Carlos C. Lourenco Dairy, described the process used for irrigating the Discharger's dairy's agricultural cropland to Fish and Wildlife wardens. Mr. Mora also explained that there should be no open valves on the property that would allow water to flow from the fields to Black Rascal Creek. The employee stated that Mr. Carlos Lourenco, operator of the dairy, was not present at the time of the discharge event.

Despite Mr. Mora's statement that all valves should have been closed during the irrigation, both Central Valley Water Board staff and Fish Wildlife wardens observed Mr. Mora closing a valve at the southern end of an agriculture field on Discharger's property during the 19 October 2017 inspection. Mr. Mora indicated that the open valve was allowing water from the field to flow in a westerly direction towards Black Rascal Creek.

Mr. Mora was unaware of why the valve was left open. Mr. Mora explained that only himself and Mr. Lourenco open the valves to irrigate the fields. However, according to a statement by Mr. Lourenco, made to Fish and Wildlife wardens on 26 October 2017, it was not the Dairy's regular practice to ensure that the valves were closed before each irrigation event. Mr. Lourenco also explained that it was his practice to leave the valves open in order to let extra water run off his fields to avoid flooding.

Mr. Mora thought that it was possible that people who dislike Mr. Lourenco may have opened the valve. Ultimately, neither the Central Valley Water Board's investigation nor the Discharger yielded evidence that the valves were tampered with.

It was not the Discharger's regular practice to ensure that the valves had been closed and the Discharger had not installed a lock on the valve, leaving the valve vulnerable to being mistakenly left open. In contrast to the Discharger, a reasonably prudent dairy operator would have ensured that the valve was less vulnerable to being mistakenly left open and would have ensured that the valves were properly closed before beginning irrigation of cropland. Therefore, a score of 1.2 is appropriate.

History of Violations

Where the discharger has no prior history of violations, this factor should be neutral, or 1.0.

The Discharger has no history of violations for which the Central Valley Water Board has taken formal enforcement action, therefore, a score of 1.0 is assigned.

Cleanup and Cooperation

Adjustments below or above 1.0 should be applied where the discharger's response to a violation or order is above and beyond, or falls below, the normally-expected response, respectively.

Here, the operator of the Dairy, Mr. Lourenco was not present on the dairy on 19 October 2017. Mr. Mora informed Central Valley Water Board staff and Fish Wildlife wardens that the irrigation of the Dairy's cropland had begun at approximately 6:00 a.m. the day prior, 18 October 2017. This information was later confirmed by Mr. Lourenco. During the at least five hours and ten minutes during which the discharge was occurring, no actions were taken to close the valve and end the discharge. The Discharger did not recover any of the 116,064 gallons of dairy wastewater that was discharged into Black Rascal Creek. A normally-expected response would have been for the Discharger to respond rapidly to discharge events in order to stop the discharge and to make efforts to pump discharged wastewater out of Black Rascal Creek. Therefore, a score of 1.2 is assigned.

Step 5: Determination of Total Base Liability Amount

The total base liability amount for violation is calculated by multiplying the initial amount by the adjustment factors for the alleged violation:

Initial Liability X Culpability X History of Violations X Cleanup and Cooperation

Violation #1: ($64,995.84) x 1.2 x 1.0 x 1.2 = $93,594.01

Total Base Liability: $93,594.01

Step 6: Ability to Pay and Continue in Business

The Enforcement Policy requires the Prosecution Team to consider whether the discharger has the ability to pay the proposed penalty. The Prosecution Team, relying on publicly available information, has made an initial showing that the Discharger has the ability to pay. Here, Discharger operates a dairy, an ongoing business which generates profits. The Discharger's dairy houses approximately 1,400 cows.

In addition to a review of publicly available information, The Prosecution Team has requested financial documents from Mr. Lourenco in order to make a more complete determination on Discharger's ability to pay a penalty. Mr. Lourenco did provide some tax documents to the Prosecution Team, however, it was not enough information for the Prosecution Team's economist to make a meaningful determination on Discharger's ability to pay. The Prosecution Team made additional requests to Mr. Lourenco in an effort to obtain complete financial information but were unable to do so as of the date of the issuance of this Complaint.

Once the Prosecution Team has made an initial showing that the Discharger has an ability to pay, the Enforcement Policy shifts the burden to the Discharger to provide evidence of its inability to pay. The Enforcement Policy goes on to state the Water Boards should treat that failure to produce financial documents in response to a subpoena as a waiver of the right the Discharger's right to challenge its ability to pay or effect on its ability to continue in business at the hearing, or an admission that the discharger is able to pay the proposed liability and that the proposed liability will not affect its ability to continue in business.

Based on publicly available information, the Prosecution Team believes that the discharger has the ability to pay. Prior to issuing this Complaint, the Prosecution Team made several attempts to obtain further details on the discharger's ability to inability to pay a proposed liability. As a result, the Prosecution Team has also issued an administrative subpoena concurrently with this Complaint to obtain relevant ability to pay information.

Step 7: Other Factors as Justice May Require

Staff Costs are not included at this time in consideration of the overall total liability. The Prosecution Team finds that the total liability is adequate to promote compliance and deterrence without the inclusion of staff costs.

Step 8: Economic Benefit

Economic benefit is any savings or monetary gain derived from the act or omission that constitutes the violation. Here, the Discharger released wastewater from the lower end of the field, rather than power the pump in the tailwater return system to move the wastewater back to the lagoon. This avoided the effort in placing and operating a tractor to power the pump and avoided the need to store the additional wastewater in the

lagoon. The Discharger avoided costs of $157 to pump the excess wastewater back to the lagoon rather than letting it flow out of the open valve into the creek.

Step 9: Maximum and Minimum Liability Amounts

The Enforcement Policy states that the total liability shall be at least 10 percent higher than the economic benefit, “so that liabilities are not construed as the cost of doing business and the assessed liability provides meaningful deterrent to future violations.”

The minimum liability in this matter is $173. This number is derived from an economic benefit that is calculated to be $157. The final liability amount is more than the economic benefit plus 10 percent, therefore, the Enforcement Policy’s requirement is met in this matter.

The maximum administrative civil liability amount per gallon pursuant to Water Code section 13350 is $10 per gallon. Therefore, the maximum liability in this matter is $1,160,640.00.

Step 10: Final Liability Amount

Based on the foregoing analysis, and consistent with the Enforcement Policy, the final liability amount proposed for the unauthorized discharge of dairy wastewater to a water of the state is **$93,594.01**.